

LISTING OF THE CLAIMS

The following listing, if entered, replaces all prior versions of the claims in the present application.

1. (Currently Amended) A method comprising:
establishing bi-directional connectivity of a network element in a network,
comprising
receiving a first unreliable packet from said network element;
storing an address of said network element in a neighbor pending list, in
response to receiving the first unreliable packet;
sending a reliable packet to said network element; and
if an acknowledgement to said reliable packet is received from said
network element, accepting said network element as a neighbor,
wherein said accepting said network element as a neighbor is done
by moving said address of said network element from said
neighbor pending list to a neighbor list.
- 2-3. (Canceled)
4. (Canceled)
5. (Currently Amended) The method of claim [[4]] 1, further comprising:
if said address of said network element is in said neighbor list,
updating a neighbor hold count for said network element.
6. (Original) The method of claim 1, further comprising:
determining if said address of said network element is in a dampening list.

7. (Original) The method of claim 6, further comprising:
if said address of said network element is in said dampening list,
updating a value of a reliability count of said network element to reflect
higher reliability of said network element.
8. (Original) The method of claim 7, further comprising:
if said value of said reliability count is a maximum value,
moving said address of said network element from said dampening list to
said neighbor pending list.
9. (Original) The method of claim 8, wherein said maximum value is
predetermined.
10. (Original) The method of claim 8, wherein said maximum value is
dynamically adjusted according to a traffic condition in said network.
11. (Previously Presented) The method of claim 8, further comprising:
if said network element is not in said dampening list,
adding said address of said network element to said dampening list, and
setting said value of said reliability count of said network element to said
maximum value.
12. (Original) The method of claim 11, further comprising:
setting said neighbor hold count for said network element; and
sending a second unreliable packet to said network element.
13. (Previously Presented) The method of claim 7, further comprising:
initiating a neighbor pending timer.

14. (Previously Presented) The method of claim 13, further comprising:
 if said acknowledgement to said reliable packet is not received before said
 neighbor pending timer expires,
 removing said address of said network element from said neighbor
 pending list, and
 updating said value of said reliability count to reflect lower reliability of
 said network element.
15. (Previously Presented) The method of claim 13, further comprising:
 if said acknowledgement to said reliable packet is received before said neighbor
 pending timer expires,
 moving said address of said network element from said neighbor pending
 list to said neighbor list, and
 removing said address of said network element from said dampening list.
16. (Currently Amended) A system for establishing bi-directional
 connectivity with a network element in a network comprising:
 a central processing module;
 a neighbor pending list coupled to said central processing module, wherein said
 central processing module is configured to store an address of said
 network element in said neighbor pending list ~~while said network element~~
~~is in a process of establishing said bi-directional connectivity with said~~
~~system;~~
a neighbor list coupled to said central processing module, wherein said central
processing module is configured to accept said network element as a
neighbor by moving said address of said network element from said
neighbor pending list to said neighbor list if an acknowledgement to a
reliable packet is received from said network element; and
 a dampening list coupled to said central processing module, wherein
 said dampening list is configured to store said address of said network
 element when a value of a reliability count is lower than a
 maximum value, and
 said maximum value is dynamically adjusted according to a traffic

condition in said network.

17. (Original) The system of claim 16, further comprising:
an input-output module coupled to said central processing module, wherein said input-output module is configured to provide input-output interface to said central processing module; and
a counter module coupled to said central processing module, wherein said counter module is configured to provide at least one of timing and counting functionality to said central processing module.

18. (Canceled)

19-20. (Canceled)

21. (Currently Amended) A network device comprising:
a processor; and
a network interface coupled to said processor, wherein
said network interface is configured to receive a first unreliable packet from a network element, and
said processor is configured to:
store an address of said network element in a neighbor pending list, in response to receipt of the first unreliable packet,
send a reliable packet to said network element, and
accept said network element as a neighbor, if an acknowledgement to said reliable packet is received from said network element, wherein said accepting said network element as a neighbor is done by moving said address of said network element from said neighbor pending list to a neighbor list.

22-23. (Canceled)

24. (Canceled)

25. (Currently Amended) The network device of claim 24 21, wherein said processor is further configured to
- if said address of said network element is in said neighbor list,
update a neighbor hold count for said network element.
26. (Original) The network device of claim 21, wherein said processor is further configured to
- determine if said address of said network element is in a dampening list.
27. (Original) The network device of claim 26, wherein said processor is further configured to
- if said address of said network element is in said dampening list,
update a value of a reliability count of said network element to reflect
higher reliability of said network element.
28. (Original) The network device of claim 27, wherein said processor is further configured to
- if said value of said reliability count is a maximum value,
move said address of said network element from said dampening list to
said neighbor pending list.
29. (Original) The network device of claim 28, wherein said maximum value is predetermined.
30. (Original) The network device of claim 28, wherein said maximum value is dynamically adjusted according to a traffic condition in said network.
31. (Previously Presented) The network device of claim 28, wherein said processor is further configured to
- if said network element is not in said dampening list,
add said address of said network element to said dampening list, and
set said value of said reliability count of said network element to said
maximum value.

32. (Previously Presented) The network device of claim 25, wherein said processor is further configured to
set said neighbor hold count for said network element; and
send a second unreliable packet to said network element.
33. (Previously Presented) The network device of claim 21, wherein said processor is further configured to
initiate a neighbor pending timer.
34. (Previously Presented) The network device of claim 33, wherein said processor is further configured to
if said acknowledgement to said reliable packet is not received before said neighbor pending timer expires,
remove said address of said network element from said neighbor pending list, and
update a value of a reliability count to reflect lower reliability of said network element.
35. (Previously Presented) The network device of claim 33, further comprising:
if said acknowledgement to said reliable packet is received before said neighbor pending timer expires,
move said address of said network element from said neighbor pending list to a neighbor list, and
remove said address of said network element from a dampening list.
36. (Currently Amended) A network device comprising:
means for establishing bi-directional connectivity of a network element in a network, comprising
means for receiving a first unreliable packet from said network element;
means for storing an address of said network element in a neighbor pending list, in response to receiving the first unreliable packet;
means for sending a reliable packet to said network element; and

means for accepting said network element as a neighbor if an acknowledgement to said reliable packet is received from said network element, wherein said accepting said network element as a neighbor is done by moving said address of said network element from said neighbor pending list to a neighbor list.

37-38. (Canceled)

39. (Canceled)

40. (Currently Amended) The network device of claim ~~39~~ 36, further comprising:

means for updating a neighbor hold count for said network element if said address of said network element is in said neighbor list.

41. (Original) The network device of claim 36, further comprising:
means for determining if said address of said network element is in a dampening list.

42. (Original) The network device of claim 41, further comprising:
means for updating a value of a reliability count of said network element to reflect higher reliability of said network element if said address of said network element is in said dampening list.

43. (Previously Presented) The network device of claim 42, further comprising:
means for moving said address of said network element from said dampening list to said neighbor pending list if said value of said reliability count is a maximum value.

44. (Original) The network device of claim 43, wherein said maximum value is predetermined.

45. (Original) The network device of claim 43, wherein said maximum value is dynamically adjusted according to a traffic condition in said network.

46. (Previously Presented) The network device of claim 42, further comprising:

means for adding said address of said network element to said dampening list if said network element is not in said dampening list, and

means for setting said value of said reliability count of said network element to said maximum value if said network element is not in said dampening list.

47. (Previously Presented) The network device of claim 36, further comprising:

means for setting a neighbor hold count for said network element; and

means for sending a second unreliable packet to said network element.

48. (Original) The network device of claim 36, further comprising:
initiating a neighbor pending timer.

49. (Previously Presented) The network device of claim 48, further comprising:

means for removing said address of said network element from said neighbor pending list if said acknowledgement to said reliable packet is not received before said neighbor pending timer expires, and

means for updating said value of a reliability count to reflect lower reliability of said network element if said acknowledgement to said reliable packet is not received before said neighbor pending timer expires.

50. (Previously Presented) The network device of claim 48, further comprising:

means for moving said address of said network element from said neighbor pending list to a neighbor list if said acknowledgement to said reliable packet is received before said neighbor pending timer expires, and

means for removing said address of said network element from a dampening list if said acknowledgement to said reliable packet is received before said neighbor pending timer expires.

51. (Currently Amended) A computer program product for establishing bi-directional connectivity of a network element in a network, encoded in computer readable media, said program product comprising a set of instructions executable on a computer system, said set of instructions configured to

receive a first unreliable packet from said network element;
store an address of said network element in a neighbor pending list, in response to receipt of the first unreliable packet;
send a reliable packet to said network element; and
if an acknowledgement to said reliable packet is received from said network element,
accept said network element as a neighbor, wherein said accepting said network element as a neighbor is done by moving said address of said network element from said neighbor pending list to a neighbor list.

52-53. (Canceled)

54. (Canceled)

55. (Currently Amended) The computer program product of claim ~~54~~ 51, wherein said set of instructions is further configured to:

if said address of said network element is in said neighbor list,
update a neighbor hold count for said network element.

56. (Original) The computer program product of claim 51, wherein said set of instructions is further configured to:

determine if said address of said network element is in a dampening list.

57. (Original) The computer program product of claim 56, wherein said set of instructions is further configured to:

if said address of said network element is in said dampening list,
update a value of a reliability count of said network element to reflect
higher reliability of said network element.

58. (Original) The computer program product of claim 57, wherein said set of instructions is further configured to:

if said value of said reliability count is a maximum value,
move said address of said network element from said dampening list to
said neighbor pending list.

59. (Original) The computer program product of claim 58, wherein said maximum value is predetermined.

60. (Original) The computer program product of claim 58, wherein said maximum value is dynamically adjusted according to a traffic condition in said network.

61. (Previously Presented) The computer program product of claim 58, wherein said set of instructions is further configured to:

if said network element is not in said dampening list,
add said address of said network element to said dampening list, and
set said value of said reliability count of said network element to said
maximum value.

62. (Previously Presented) The computer program product of claim 61, wherein said set of instructions is further configured to:

set a neighbor hold count for said network element; and
send a second unreliable packet to said network element.

63. (Original) The computer program product of claim 51, wherein said set of instructions is further configured to:

initiate a neighbor pending timer.

64. (Previously Presented) The computer program product of claim 63, wherein said set of instructions is further configured to:

if said acknowledgement to said reliable packet is not received before said neighbor pending timer expires,
remove said address of said network element from said neighbor pending list, and
update a value of a reliability count to reflect lower reliability of said network element.

65. (Previously Presented) The computer program product of claim 63, wherein said set of instructions is further configured to:

if said acknowledgement to said reliable packet is received before said neighbor pending timer expires,
move said address of said network element from said neighbor pending list to a neighbor list, and
remove said address of said network element from a dampening list.